

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. - 104. (Canceled).

105. (Currently Amended) A method of treating recurrent miscarriage by inducing immune tolerance to a paternal antigen in a mammalian prospective mother lacking said immune tolerance, said method comprising exposing a mucosal surface of said prospective mother to:

a) semen or an MHC Class I antigen ~~on the sperm~~ of a prospective father capable of eliciting a Th-1 response; and

b) a substantially purified TGF $\beta$  selected from the group consisting of TGF $\beta$ 1, TGF $\beta$ 2, and TGF $\beta$ 3,

~~and~~ wherein the exposure is at a time and in an amount effective to induce said immune tolerance **and is at least one week before attempted conception.**

106. (Currently Amended) The method according to **any one of** claims 105, **141, 142, 143, or 144,** wherein the prospective mother and father are both human.

107. (Currently Amended) The method according to **any one of** claims 105, **141, 142, 143, or 144,** wherein the TGF $\beta$  and the semen or MHC Class I antigens **are** ~~[[is]]~~ administered at one site.

108. (Currently Amended) The method according to **any one of** claims 105, **141, 142, 143, or 144,** wherein the TGF $\beta$  and the semen or MHC Class I antigen are respectively administered at a first site and a different site.

109. (Currently Amended) The method according to **any one of** claims 105, **141, 142, 143, or 144,** wherein the TGF $\beta$  and the semen or MHC Class I antigen are administered temporally spaced apart.

110. (Previously Presented) The method according to claim 109, wherein the semen or MHC Class I antigen is administered subsequent to an administration of  $TGF\beta$ .

111. (Previously Presented) The method according to claim 109, wherein the semen or MHC Class I antigen is administered first followed by administration of  $TGF\beta$ .

112. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the MHC Class I antigen is from sperm cells of the prospective father.

113. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the semen or MHC Class I antigen is presented in purified or semi-purified form.

114. (Previously Presented) The method according to claim 113, wherein the purified or semi-purified semen or MHC Class I antigen is presented on an inert or adjuvant carrier.

115. (Canceled).

116. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the  $TGF\beta$  is supplied in a slow release form.

117. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the exposure of the semen or MHC Class I antigen is to the prospective mother's genital tract in the form of the prospective father's ejaculate.

118. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the mucosal surface is selected from the group comprising of an oral mucosal surface, a respiratory mucosal surface, a gastrointestinal mucosal surface and a genital mucosal surface.

119. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the mucosal surface is a genital mucosal surface.

120. (Canceled).

121. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the mucosal surface is exposed to a concentration of TGF $\beta$  of 100ng/ml.

122. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the mucosal surface is exposed to a concentration of TGF $\beta$  of 200ng/ml.

123. (Canceled).

124. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein TGF $\beta$  is administered in its active form.

125. (Currently Amended) The method according to claims 105, 141, 142, 143 or 144, wherein the prospective mother is incapable of converting a sufficient amount of the inactive form of TGF $\beta$  to active TGF $\beta$ , and the method includes administration of active TGF $\beta$ .

126. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the prospective mother is incapable of converting the inactive form of TGF $\beta$  to active TGF $\beta$ , and the method includes administration of plasmin, so as to increase the level of active TGF $\beta$ .

127. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein the prospective mother and father are human and the exposure to TGF $\beta$  and the semen or MHC Class I antigen of the prospective father is a multiple exposure.

128. - 131. (Canceled).

132. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, wherein administration of TGF $\beta$  and the semen or MHC Class I antigen occurs at least once after attempted conception.

133. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, further including a step, prior to exposure to antigen and TGF $\beta$ , of diagnosing or testing whether

- (a) the prospective father has adequate levels of TGF $\beta$ ;
- (b) the prospective mother has the capacity to activate TGF $\beta$ , or
- (c) anti-sperm antibodies are present in the prospective mother.

134. (Currently Amended) The method according to any one of claims 105, 141, 142, 143, or 144, used in conjunction with IVF treatment.

135. - 140. (Canceled).

141. (New) A method of treating recurrent miscarriage by inducing immune tolerance to a paternal antigen in a mammalian prospective mother lacking said immune tolerance, said method comprising exposing a mucosal surface of said prospective mother to:

- a) semen or an MHC Class I antigen of a prospective father capable of eliciting a Th-1 response; and
- b) a substantially purified TGF $\beta$  selected from the group consisting of TGF $\beta$ 1, TGF $\beta$ 2, and TGF $\beta$ 3,

wherein the exposure is at a time and in an amount effective to induce said immune tolerance and is performed over a period spanning at least three months prior to attempted conception.

142. (New) A method of treating recurrent miscarriage by inducing immune tolerance to a paternal antigen in a mammalian prospective mother lacking said immune tolerance, said method comprising exposing a mucosal surface of said prospective mother to:

a) semen or an MHC Class I antigen of a prospective father capable of eliciting a Th-1 response; and

b) a substantially purified  $TGF\beta$  selected from the group consisting of  $TGF\beta 1$ ,  $TGF\beta 2$ , and  $TGF\beta 3$ ,

wherein the exposure is at a time and in an amount effective to induce said immune tolerance and continues over a period of the first 12 weeks of pregnancy.

143. (New) A method of treating recurrent miscarriage by inducing immune tolerance to a paternal antigen in a mammalian prospective mother lacking said immune tolerance, said method comprising exposing a mucosal surface of said prospective mother to:

a) semen or an MHC Class I antigen of a prospective father capable of eliciting a Th-1 response; and

b) a substantially purified  $TGF\beta$  selected from the group consisting of  $TGF\beta 1$ ,  $TGF\beta 2$ , and  $TGF\beta 3$ ,

wherein the exposure is at a time and in an amount effective to induce said immune tolerance and the mucosal surface is exposed to a concentration of  $TGF\beta$  of between 100 and 400 ng/ml.

144. (New) A method of treating recurrent miscarriage by inducing immune tolerance to a paternal antigen in a mammalian prospective mother lacking said immune tolerance, said method comprising exposing a mucosal surface of said prospective mother to:

a) semen or an MHC Class I antigen of a prospective father capable of eliciting a Th-1 response; and

b) a substantially purified  $TGF\beta$  selected from the group consisting of  $TGF\beta 1$ ,  $TGF\beta 2$ , and  $TGF\beta 3$ ,

wherein the exposure is at a time and in an amount effective to induce said immune tolerance and the mucosal surface is exposed to a concentration of TGF $\beta$  of between 100 and 400 ng/mL, with a total dose of between 100 to 2000 ng.